

## PATENT ABSTRACTS OF JAPAN

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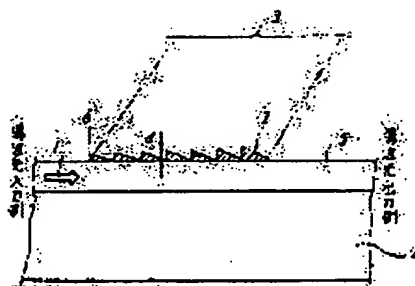
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### (54) INPUT-OUTPUT DEVICE FOR GUIDED LIGHT

#### (57)Abstract:

PURPOSE: To improve the input-output characteristic of the titled device, by changing the depth of a grating forming a grating coupler.

CONSTITUTION: An optical wave guide 5 is formed on a base plate 4 made of sapphire by using a PLZT thin film and a grating coupler 2 is formed on the wave guide 5 to have a saw-tooth-like cross section by using an electron beam resisting PMMA. In this case, depths (d) of the grooves of the grating 6 are not the same, but gradually increased from the input side of quided lights 1, for example, from  $0.01\mu\text{m}$  to  $0.07\mu\text{m}$ . Therefore, the distribution of output light 3 to the outside can be made almost flat. In addition, when the changing rate of the depths (d) of the grooves is changed, the intensity distribution of the output light 3 can be controlled and, even in a case where light is inputted in the grating coupler 2, the input efficiency can be improved.



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